

**CONDITIONAL PETITION FOR EXTENSION OF TIME**

If entry and consideration of the amendments above requires an extension of time, Applicants respectfully request that this be considered a petition therefor. The Commissioner is authorized to charge any fee(s) due in this connection to Deposit Account No. 14-1263.

**ADDITIONAL FEE**

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No. 14-1263.

## REMARKS

Applicants respectfully request reconsideration and allowance of this application in view of the amendments above and the following comments.

Claim 27 is amended above to conform to track the exact wording of claim 19 to make clear that claim 27 is, in fact, simply one of the two “either/or” embodiments of claim 19. New claims 29-31 are simply claims 22-24 made dependent on claim 27. No new matter is added by this amendment. An early notice to that effect is earnestly solicited.

Reconsideration and withdrawal of the restriction requirement is respectfully requested. Claim 27, as should be clear from the amendments above, is embraced by claim 19 and, thus, is not, in fact, an alternative embodiment to claim 19, but, rather, one of two embodiments falling under claim 19. These two embodiments were in original claim 1 and the Examiner has never through 7 years of prosecution until now required restriction between these two embodiments and is not justified in doing so now. Indeed, as claim 19 includes claim 27 and claim 19 has been fully searched and examined, no serious search burden attends the Examiner’s continued examination of this subject matter. In view of the foregoing, Applicants respectfully request that the Examiner reconsider and withdraw the restriction requirement. An early notice that the restriction requirement has been reconsidered and withdrawn is earnestly solicited.

Claims 18, 19, 22, 25 and 26 were rejected under 35 USC § 103(a) as being obvious over the combination of Thomas, US 7,153,135, in view of Dillier, US 2002/0110786.

Claim 20 was rejected under 35 USC § 103(a) as being obvious over Thomas in view of Dillier and further in view of Baumrind, US 6,621,491.

Claim 21 was rejected under 35 USC § 103(a) as being obvious over Thomas in view of Dillier and further in view of Chishti, US 5,975,893.

Claims 23 and 24 were rejected under 35 USC § 103(a) as being obvious over Thomas in view of Dillier and further in view of Jordan et al. ("Jordan"), US 6,152,731.

In response to *all* of the obviousness rejections, Applicants note that all of these rejections depend upon the combination of Thomas and Dillier making out a *prima facie* case of the obviousness of main device claim 18 and main method claim 19, which Applicants respectfully submit the combination of Thomas and Dillier fails to do. There is nothing in either Baumrind or Chishti or Jordan that remedies the deficiencies of Thomas in view of Dillier. Therefore, Applicants respectfully submit that the combinations of Thomas taken in view of Dillier alone or further in view of Baumrind or Chishti or Jordan each fail to make out a *prima facie* case of the obviousness of any of the rejected claims.

Before addressing the product and method claims separately, Applicants provide some general comments applicable to all claims. Applicants strongly disagree with the Examiner that Thomas and Dillier are properly combined.

Thomas' method is directed to provision of **full** upper and/or lower dentures. Partial dentures are expressly stated to be beyond the scope of his invention. See, column 1, lines 37-38; column 11, lines 55-57; column 14, lines 17-18.

The oral cavity and the full complement of actual teeth of a person are scanned and digitized early in life for use later in life when full upper and lower dentures are needed. Column 10, lines 11-13. When full upper and/or lower dentures are needed, this pre-stored model of his or her previously existing oral cavity and teeth is used for the outer surface of the artificial denture, which can then be worked up by rapid prototyping. Column 10, lines 61-63; column 11, lines 55-63.

Dillier, in contrast, is not concerned with full dentures, but rather with replacing **single teeth**. This can be concluded from his use of the term "prepared dentition" and his figures showing *individual* teeth replacements being worked up. See, for example, Figure 1, single tooth element 4, which is then worked up as shown in the remaining figures. See, also, paragraph [0046]: "[T]he method includes selection of a prosthetic shape to replace and substitute for the **original tooth**."

Respectfully, the two methods are not combinable. A person having ordinary skill in the art, given Thomas' goal of providing a **full** denture by rapid prototyping based on a digitized model of the patient's original **full mouth of teeth** would not have looked

to Dillier for teachings and suggestions how to improve Thomas' method because Dillier involves an altogether different problem of replacing *single* teeth. Hypothesized modification of Thomas to replace single teeth defeats Thomas' core purpose of replacing full dentures quickly and efficiently with rapid prototyping and is against his express statements that partial dentures are not embraced. Indeed, it is legally erroneous to conclude that one having ordinary skill in the art would have been motivated to modify a reference in a manner inconsistent with the disclosed objectives or to render the disclosed invention inoperative. *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984); *In re Schulpen*, 390 F.2d 1009 (C.C.P.A. 1968). *See, also*, *MPEP* § 2143.01(V), entitled "**The Proposed Modification Cannot Render the Prior Art Unsatisfactory for It's Intended Purpose**"; and to *MPEP* § 2143.01(VI), entitled "**The Proposed Modification Cannot Change the Principle of Operation of a Reference.**" Applicants respectfully submit that the Examiner's proposed combination of Thomas and Dillier, hypothesizing that persons skilled in the art had motivation to use Dillier's single tooth replacement method in Thomas' full denture replacement method, violates both of these basic principles of patent law and, therefore, is presumptively improper.

Further, whereas Thomas' method uses the pre-stored model of the pre-existing oral cavity and teeth as the model for the outer surface of the artificial denture, the present invention uses data of prefabricated artificial (synthetic) teeth which have the necessary surfaces for occlusion. These teeth are fitted into the virtual model of the

patient's oral situation having missing teeth. The virtual articulator then makes sure that lower and upper artificial teeth pairs fit together when the mouth is closed for biting.

On the other hand, in Dillier, the selected prosthetic shape is manipulated to fit into the data set that previously taken from the die cast of the prepared dentition. Dillier does not, in fact, teach the use data of prefabricated teeth. The presently claimed process does not fit the data taken from the prefabricated teeth. Instead, these must remain fixed as these teeth are later placed into the denture base.

Respectfully, Thomas and Dillier are not properly combined and cannot have made the present invention *prima facie* obvious to persons skilled in the art.

#### **Claim 18**

Claim 18 is drawn to a device requiring certain components. The Examiner concedes that Thomas does not teach all of the components. Since Thomas and Dillier are not properly combined for the reasons advanced above, the cited prior art cannot possibly render *prima facie* obvious the subject matter of claim 18.

As pointed out in Applicants' last response, the following elements of claim 18 cannot be found in the combination of references:

- (d) a processing module that fits data for prefabricated dental prostheses into the virtual model and thereby creates a virtual model with integrated dental prosthetic teeth; and

- (e) a simulation module that simulates mandibular movements on the virtual model and tests and optimizes positions of the integrated dental prosthetic teeth in the virtual model.

The Examiner responds that Dillier teaches element (d). Applicants respectfully disagree, but point out that the Examiner has not commented at all with respect to Applicants' argument that element (e) is also missing. The failure of the combination of Thomas and Dillier to teach or suggest element (e) is itself sufficient to prove lack of a *prima facie* case of obviousness.

Further, since the foregoing argument was made well in advance of the outstanding Office Action, should the Examiner offer rebuttal in a subsequent Office Action, that Office Action should not under any circumstances be made final because the Examiner could and should have offered such rebuttal in the outstanding Office Action so Applicants could respond as a matter of right.

In view of the foregoing, Applicants respectfully submit that the combination of Thomas and Dillier does not make out a *prima facie* case of the obviousness of claim 18. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw this rejection as to claim 18. An early notice that this rejection has been reconsidered and withdrawn is earnestly solicited.

### Claims 19-26

Since Thomas and Dillier are not properly combined for the reasons advanced above, the cited prior art also cannot possibly render *prima facie* obvious the subject matter of any of claims 19-26.

Applicants note again that the Examiner concedes that Thomas does not teach scanning fabricated teeth to produce 3D data records of fabricated teeth, selecting fabricated teeth from 3D data records, and virtually placing the teeth into the virtual model.

Applicants reiterate that Dillier constructs a three-dimensional digital model of a *die* in a computer, which is certainly not a virtual model of an oral cavity, as required by instant claim 19. Thus, claim 19 requires in step (b) recording and digitizing 3-dimensional, anatomical relationships *in an oral cavity*. Then, claim 19 requires in step (e) processing the data obtained from step (b), i.e., from the oral cavity, to obtain the virtual model data record. This virtual model data record is then used in step (g) for virtual placing of the fabricated teeth into the virtual model. There is in the combination of Thomas and Dillier no teaching or suggestion to make a virtual model including anatomical relationships in an oral cavity, and, thus, no teaching or suggestion to carry out, at a minimum, required steps (e) and (g) of claim 19. Absent that teaching or suggestion, the combination of Thomas and Dillier cannot make out a *prima facie* case of the obviousness of the claim 19. Further, the combinations of Thomas, Dillier and



Baumrind or Chishti or Jordan cannot make out a *prima facie* case of the obviousness of any of the other rejected claims.

The Examiner maintains that the failure of Dillier to teach recording and digitizing 3-dimensional, anatomical relationships *in an oral cavity* is remedied by Thomas. Respectfully, the Examiner misses the point and never answers Applicants' previous question: If Dillier is making a die, why should a person skilled in the art apply the steps he proposes to Thomas' fundamentally different method being carried out in an oral cavity? Viewed prospectively, and not in hindsight, Applicants respectfully submit that no person having ordinary skill in the art, given Thomas and Dillier, is taught or suggested to carry out the inventive method in an oral cavity, as required by the instant claims.

In view of the foregoing, Applicants respectfully request that the Examiner reconsider and withdraw all four obviousness rejections. An early notice that all four obviousness rejections have been reconsidered and withdrawn is earnestly solicited.

Applicants believe that the foregoing constitutes a bona fide response to all outstanding objections and rejections.

Applicants also believe that this application is in condition for immediate allowance. However, should any issue(s) of a minor nature remain, the Examiner is respectfully requested to telephone the undersigned at telephone number (212) 808-0700 so that the issue(s) might be promptly resolved.

Early and favorable action is earnestly solicited.

Respectfully submitted,

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